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AF/3661

[10191/2159]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of: Andreas HUBER et al.

For: METHOD AND DEVICE FOR CONTROLLING A DRIVE UNIT OF A VEHICLE

Filed: May 7, 2002

Serial No.: 10/018,197

Examiner: Olga Hernandez

Art Unit: 3661

----------X

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Date: 3/16/04 ~~Reg. No. 22,490~~

Signature: Catherine Edmund
~~Richard L. Mayer~~

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P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 1.192(a)

SIR:

Applicants transmit herewith an Appeal Brief Pursuant to 37 C.F.R. § 1.192 (a) for the above-identified application.

Applicants request a three month extension of time to respond to the Notice of Appeal mailed on November 5, 2003, resetting the response date to April 5, 2004. The extension fee of $950.00 should be charged to Kenyon & Kenyon, Deposit Account No. 11-0600.

Please charge the Appeal Brief fee of $330.00 and any additional fees to Kenyon & Kenyon, Deposit Account No. 11-0600.

Respectfully submitted,

By: Reg No 35,452

Dated: 3/16/04

Richard L. Mayer, Reg. No. 22,490
KENYON & KENYON
One Broadway
New York, New York 10004
(212) 425-7200

[10191/2159]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Examiner: Olga HERNANDEZ
Andreas HUBER et al.	
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Signature: _____
Richard L. Mayer (Reg. No. 22,490)

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 1.192(a)

S I R:

In the above-identified patent application ("the present application"), Appellant mailed a Notice of Appeal on November 5, 2003 from the Final Office Action issued by the United States Patent and Trademark Office on August 7, 2003. In the Final Office Action, claims 7, 8 and 11 to 20 were finally rejected. An Advisory Action was mailed on October 10, 2003.

In accordance with 37 C.F.R. § 1.192(a), this Appeal Brief is submitted in triplicate in support of the appeal of the final rejection of claims 7, 8 and 11 to 20. For the reasons more fully set forth below, the final rejection of claims 7, 8 and 11 to 20 should be reversed.

1. REAL PARTY IN INTEREST

The real party in interest in the present appeal is Robert Bosch GmbH, Stuttgart, Federal Republic of Germany. Robert Bosch GmbH is the assignee of the entire right, title, and interest in the above-identified application.

2. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences "which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal."

3. STATUS OF CLAIMS

Claims 1 to 6 have been canceled.

Claims 7, 8 and 11 to 20 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,345,558 ("Yamaguchi et al.").

Claims 9 and 10 are allowed.

A copy of the appealed claims is attached hereto in the Appendix.

4. STATUS OF AMENDMENTS

In response to the Final Office Action issued on August 7, 2003, a Reply Under 37 C.F.R. § 1.116 was filed on September 30, 2003. No proposed amendments to the claims were presented in the Reply Under 37 C.F.R. § 1.116.

5. SUMMARY OF THE INVENTION

The present invention relates to a method and a device for controlling a drive unit of a vehicle. Specification, page 1, lines 2 to 3.

According to one example embodiment of the present invention, changes of state between thrust and traction may be implemented very rapidly by applying a filter means 120, in which at least one high-pass filter 240, 270 and one low-pass filter 210 are connected in parallel, to a signal QK indicating a power desired from the engine. Specification,

page 1, lines 25 to 28. According to an example embodiment, the signal QK may be derived from the position of an operating element of the drive unit of the vehicle, such as the accelerator pedal. Specification, page 3, lines 21 to 27. The filter means facilitate a damping of shock on arrival in the new contact position, yielding a definite noise reduction during the load reversal process, a reduction in the load shock at load reversal as a result of minor changes in the driver's selection, and a reduced bucking tendency of the drive train. Specification, page 1, line 30 to page 2, line 4.

According to an example embodiment of the present invention, due to the parallel connection of the at least one high-pass filter 240, 270 and low-pass filter 210 and the fact that the variation of the phase angles of the signal output from these filters is applied to the engine-drive train combination, the driving performance may be designed to be largely independent of the damping of load shock. Specification, page 2, lines 5 to 10.

According to an example embodiment of the present invention, application of the filter means 120 causes the masses of the drive train to be accelerated by at least one moment pulse and to be decelerated again prior to reading the new contact position, so the position of this pulse relative to the time of the change in quantity selection as well as the position of the pulses relative to one another are variable. Specification, page 2, lines 17 to 22.

According to an example embodiment of the present invention, a method of controlling a drive unit of a vehicle having an actuator element for influencing power provided to the drive unit includes: determining a power determining signal from a position of an operating element of the drive unit of the vehicle; filtering the power determining signal with a filter, the filter including at least one high-pass filter and at least one low-pass filter connected in parallel; and controlling the actuator element of the drive unit of the

vehicle as a function of the filtered power determining signal. Claim 7.

According to an example embodiment of the present invention, a device for controlling a drive unit of a vehicle having an actuator element for influencing power provided to the drive unit includes: a quantity input determining unit for determining a power-determining signal from a position of an operating element of the drive unit of the vehicle; and a filter unit coupled to the quantity input determining unit, the filter unit including at least one high-pass filter and one low-pass filter connected in parallel, the filter unit filtering the power-determining signal output from the quantity input determining unit; in which the actuator element of the drive unit of the vehicle is controlled as a function of the filtered power-determining signal. Claim 11.

According to an example embodiment of the present invention, a device for controlling a drive unit of a vehicle including an actuator element for influencing power provided to the drive unit includes: a quantity input determining unit configured to determine a power-determining signal from a position of an operating element of the drive unit of the vehicle; and a filter unit coupled to the quantity input determining unit, the filter unit including at least one high-pass filter and one low-pass filter connected in parallel, the filter unit configured to filter the power-determining signal output from the quantity input determining unit; in which wherein the actuator element of the drive unit of the vehicle is configured to be controlled as a function of the filtered power-determining signal. Claim 17.

6. ISSUE

Whether claims 7, 8 and 11 to 20 are patentable over Yamaguchi et al.

7. GROUPING OF CLAIMS

Claims 7, 8 and 11 to 20 stand or fall together.

8. **ARGUMENTS**

Claims 7, 8 and 11 to 20 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Yamaguchi et al. Appellants respectfully submit that Yamaguchi et al. do not render unpatentable the present claims for the following reasons and respectfully submit that the present rejection should be reversed.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Claim 7 relates to a method of controlling a drive unit of a vehicle having an actuator element for influencing power provided to the drive unit in which a power determining signal is, in turn, determined from a position of an operating element of the drive unit of the vehicle. Claim 7 further recites that the power determining signal is filtered using a filter that includes at least one high-pass filter and at least one low-pass filter connected in parallel. Claim 7 also recites that the actuator element of the drive unit of the vehicle is controlled as a function of the filtered power determining signal.

Yamaguchi et al. purportedly relate to a knock detecting apparatus for use with internal combustion engine ignition timing control systems. Col. 1, lines 6 to 8. The

apparatus of Yamaguchi et al. is designed to improve the signal-to-noise ratio of vibration (knock) detection at higher frequencies (11 kHz to 13 kHz) associated with high engine speeds (or engine loads). Col. 5, lines 4 to 15. In the apparatus according to Yamaguchi et al., a signal from a vibration detector (2) is passed to a filter circuit (308) that includes a high-pass filter and a low-pass filter connected in parallel. Col. 12, line 67 to col. 13, line 15. At high engine speeds, a filter control circuit (310) switches the output of the filter circuit so that the output of the high-pass filter is passed to a knock detection circuit (309). Col. 15, lines 46 to 62. The knock detection circuit (309), in turn, brings about changes in ignition timing depending upon whether the presence of a knock has been (or has not been) detected. Col. 15, lines 20 to 28. In addition, at the section cited in the Response to Arguments section of the Final Office Action, Yamaguchi et al. set forth that an engine load condition may be detected and applied to the filter control circuit (310) as a filter selecting parameter. Col. 16, lines 23 to 34.

It is clear that Yamaguchi et al. describe selectable filtering of an engine vibration to improve signal-to-noise characteristics and do not disclose or suggest filtering a power determining signal or controlling the actuator element of the drive unit of the vehicle as a function of the filtered power determining signal. The Specification of the present application makes clear that the power determining signal represents a measure of the power desired from the engine. Yamaguchi et al. do not disclose or suggest using a filter to alter the characteristics of a signal that represents a measure of power desired from the engine. Since Yamaguchi et al. do not disclose or suggest filtration of a power determining signal, a fortiori, Yamaguchi et al. do not disclose or suggest using a filtered power determining signal to control an actuator element of the drive unit of a vehicle.

In the section relied upon in the Final Office Action, Yamaguchi et al. refer to using a signal indicative of a engine load condition in lieu of an engine speed condition in the filter control circuit as a criteria for **selecting** a low pass versus a high filter. Col. 16, lines 23 to 31. Therefore, Yamaguchi et al. use a signal indicative of an engine load (or power) for selection and **do not actually applying either a low-pass filter or a high-pass filter to the signal indicative of the engine load condition**.

It is again noted that this is in stark contrast with that which is presently claimed in the present application in which the power determining signal is filtered with a filter including at least one high-pass filter and at least one low-pass filter connected in parallel. The specification describes an embodiment of this process as follows:

> To prevent load shock, the injection quantity must not be released suddenly in the case of a diesel engine. It is sufficient here to filter the injection quantity only in the range in which the engine is moving relative to the vehicle body. ***This filtering of the fuel quantity signal*** takes place through filter means 120, with the filtering depending on various status parameters characterizing the state of the combustion engine and/or the vehicle driven. Filtering can depend on rpm, which is detected by an rpm sensor 125. The transmission performance of filter means 120 is shown in Figure 2. ***Filtered quantity signal QKF is sent to controller 110***.

Specification at page 4, lines 5 to 16 (emphasis added).

According to the above-quoted passages, it can be seen that eliminating load shock may be achieved by filtering an input signal (QK) indicative of a measure of the power desired from the engine, resulting in a modified output signal (QKF) which is then supplied to an actuator and/or controller. It is again emphasized that, in contrast to Yamaguchi et al., the power determining signal is not used to select a filtration band for modifying another signal, but is itself the signal that is filtered and thereby modified.

As regards "filtering the power determining signal with a filter, the filter including at least one high-pass filter and at least one low-pass filter connected in parallel," the Final Office Action merely refers to Figure 13. However, Yamaguchi et al. state that "[reference] numeral 308 designates a filter circuit which receives the output signals of a vibration detector 2 and has a plurality of band-pass filter characteristics and in which the filters are selectively operated by externally applied signals." Col. 10, lines 61 to 65. Yamaguchi et al. further state that the filter circuit 308 includes "a pair of band-pass filters 681 and 682 respectively having bands of 7 to 10 kHz and 11 to 13 kHz, analog switches 683 and 684, and a NOT gate 685, whereby the filter constant for the output of the vibration detector 2 is changed to a low filter value (7 to 10 kHz) or a high filter value (11 to 13 kHz) in accordance with the output of the filter control circuit 310." Col. 12, line 67 to col. 12, line 6. Applicants respectfully submit that the description of a vibration detector 2 by Yamaguchi et al. does not constitute a disclosure or suggestion of "determining a power determining signal from a position of an operating element," and, therefore, it is respectfully submitted that the description by Yamaguchi et al. of the filter circuit 308 does not constitute a disclosure, or even a suggestion, of "filtering the power determining signal with a filter, the filter including at least one high-pass filter and at least one low-pass filter connected in parallel" as recited in claim 7.

Because Yamaguchi et al. do not disclose, or even suggest, filtering a power determining signal or controlling the actuator element of the drive unit of the vehicle as a function of the filtered power determining signal as required by claim 7, it is respectfully submitted that Yamaguchi et al. do not render obvious claim 7 or claims 8, 13 and 14 which depend from claim 7.

As regards claim 11, claim 11 recites a filter unit coupled to a quantity input determining unit, the filter unit

including at least one high-pass filter and one low-pass filter connected in parallel, the filter unit filtering the power-determining signal output from the quantity input determining unit. As discussed above with respect to independent claim 7, Yamaguchi et al. do not disclose or suggest a filter unit filtering the power-determining signal output from a quantity input determining unit. For at least this reason, it is submitted that Yamaguchi et al do not render obvious claim 11, or claims 12, 15 and 16, which depend from claim 11.

As regards claim 17, claim 17 recites a filter unit coupled to the quantity input determining unit, the filter unit including at least one high-pass filter and one low-pass filter connected in parallel, the filter unit configured to filter the power-determining signal output from the quantity input determining unit. As discussed above with respect to independent claim 7, Yamaguchi et al. do not disclose or suggest such a filter unit. For at least this reason, it is submitted that Yamaguchi et al do not render obvious claim 17, or claims 18 to 20, which depend from claim 17.

In view of the foregoing, it is respectfully submitted that claims 7, 8 and 11 to 20 are patentable over Yamaguchi et al. Reversal of the present rejection is therefore respectfully requested.

9. CONCLUSION

For at least the reasons indicated above, Appellants respectfully submit that the art of record does not teach or suggest Appellants' invention as recited in the claims of the present application. Accordingly, it is respectfully submitted that the invention recited in the claims of the present application is new, non-obvious and useful. Reversal

of the Examiner's rejections of the claims is therefore respectfully requested.

Respectfully submitted,

Dated: 3/16/04

By: By: Reg No 35,952

Richard L. Mayer
Reg. No. 22,490

KENYON & KENYON
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

APPENDIX

7. A method of controlling a drive unit of a vehicle having an actuator element for influencing power provided to the drive unit, the method comprising:

determining a power determining signal from a position of an operating element of the drive unit of the vehicle;

filtering the power determining signal with a filter, the filter including at least one high-pass filter and at least one low-pass filter connected in parallel; and

controlling the actuator element of the drive unit of the vehicle as a function of the filtered power determining signal.

8. The method according to claim 7, wherein the filtered power determining signal has at least one pulse that corresponds in direction to a direction of a change in power derived from the power determining signal.

11. A device for controlling a drive unit of a vehicle having an actuator element for influencing power provided to the drive unit, comprising:

a quantity input determining unit for determining a power-determining signal from a position of an operating element of the drive unit of the vehicle; and

a filter unit coupled to the quantity input determining unit, the filter unit including at least one high-pass filter and one low-pass filter connected in parallel, the filter unit filtering the power-determining signal output from the quantity input determining unit,

wherein the actuator element of the drive unit of the vehicle is controlled as a function of the filtered power-determining signal.

12. The device according to claim 11, wherein the filtered power-determining signal has at least one pulse that corresponds in direction to a direction of a change in power derived from the power-determining signal.

13. The method according to claim 7, wherein the operating element of the drive unit of the vehicle includes at least one of an acceleration pedal of the vehicle and a rotary potentiometer.

14. The method according to claim 7, wherein the actuator element of the drive unit of the vehicle includes at least one of a fuel metering device and a solenoid valve.

15. The device according to claim 11, wherein the operating element of the drive unit of the vehicle includes at least one of an acceleration pedal of the vehicle and a rotary potentiometer.

16. The device according to claim 11, wherein the actuator element of the drive unit of the vehicle includes at least one of a fuel metering device and a solenoid valve.

17. A device for controlling a drive unit of a vehicle including an actuator element for influencing power provided to the drive unit, comprising:

a quantity input determining unit configured to determine a power-determining signal from a position of an operating element of the drive unit of the vehicle; and

a filter unit coupled to the quantity input determining unit, the filter unit including at least one high-pass filter and one low-pass filter connected in parallel, the filter unit configured to filter the power-determining signal output from the quantity input determining unit;

wherein the actuator element of the drive unit of the vehicle is configured to be controlled as a function of the filtered power-determining signal.

18. The device according to claim 17, wherein the filtered power-determining signal has at least one pulse that corresponds in direction to a direction of a change in power derived from the power-determining signal.

19. The device according to claim 17, wherein the operating element of the drive unit of the vehicle includes at least one of an acceleration pedal of the vehicle and a rotary potentiometer.

20. The device according to claim 17, wherein the actuator element of the drive unit of the vehicle includes at least one of a fuel metering device and a solenoid valve.